

Atty. Dkt. No. 073442-0301

Amendments to the Claims:

Please amend claim 25 as shown in the Listing of Claims below. The Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A method of inducing apoptosis of a selected group of vertebrate cells *in vivo*, comprising administering to a vertebrate comprising said cells a thiaminase or derivative thereof or a non-pathogenic bacterium comprising a recombinant nucleic acid molecule encoding said thiaminase or derivative targeted to said selected group of vertebrate cells, thereby reducing the level of thiamin in said cells sufficiently to induce apoptosis of said cells.

3. (Previously presented) A method for delivering a thiaminase or derivative thereof to vertebrate cells *in vivo*, comprising the step of contacting said cells with a non-pathogenic bacterium comprising a nucleic acid sequence encoding said thiaminase or derivative.

10. (Previously presented) A eukaryotic expression vector comprising a recombinant nucleic acid sequence encoding a thiaminase.

11. (Previously presented) A vector comprising a recombinant nucleic acid sequence encoding a thiaminase, wherein said thiaminase or derivative is different from a thiaminase from *Bacillus thiaminolyticus*.

18. (Previously presented) A purified, enriched, or isolated nucleic acid sequence encoding a thiaminase or derivative different from *Bacillus thiaminolyticus* thiaminase I, wherein said nucleic acid sequence is at least 70% identical to an equal length sequence at least 500 nucleotides in length of the *Naegleria gruberi* thiaminase sequence of SEQ ID NO. 3.

Atty. Dkt. No. 073442-0301

19. (Previously presented) The nucleic acid sequence of claim 18, wherein said nucleic acid sequence comprises a sequence at least 95% identical to the sequence of SEQ ID NO. 3.

20. (Previously presented) A method for identifying a nucleic acid sequence coding for a thiaminase from a species different from *Naegleria gruberi* or *Bacillus thiaminolyticus*, comprising

identifying a nucleic acid sequence from said species that is homologous to a thiaminase sequence from *Naegleria gruberi* or *Bacillus thiaminolyticus*.

21. (Previously presented) The method of claim 20, wherein said identifying comprises amplifying a nucleic acid sequence from said species using primers derived from *Naegleria gruberi* or *Bacillus thiaminolyticus*.

22. (Previously presented) The method of claim 20, wherein said identifying comprises performing sequence comparisons in a sequence database to identify homologous sequences.

23. (Previously presented) The method of claim 20, wherein said identifying comprises probing nucleic acid from said species with probes derived from *Naegleria gruberi* or *Bacillus thiaminolyticus*.

24. (Previously presented) The method of claim 20, wherein said identifying comprises sequencing at least a portion of a thiaminase sequence isolated from said species; and identifying a nucleic acid sequence from said species encoding said thiaminase sequence.

25. (Amended) A non-pathogenic bacterium ~~encoding~~ comprising a recombinant nucleic acid sequence encoding a thiaminase.

Atty. Dkt. No. 073442-0301

26. (Previously presented) The bacterium of claim 25, wherein said bacterium is a Clostridium bacterium.

27. (Previously presented) The bacterium of claim 25, wherein said bacterium is a Salmonella bacterium.

28. (Previously presented) The method of claim 1, wherein said thiaminase is at least 35% identical to the thiaminase of SEQ ID NO: 4.

29. (Previously presented) The method of claim 1, wherein said thiaminase is at least 50% identical to the thiaminase of SEQ ID NO: 4.

30. (Previously presented) The method of claim 3, wherein said thiaminase is at least 35% identical to the thiaminase of SEQ ID NO: 4.

31. (Previously presented) The method of claim 3, wherein said thiaminase is at least 50% identical to the thiaminase of SEQ ID NO: 4.